



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------|-------------|--------------------------|---------------------|------------------|
| 10/604,166 | 06/28/2003 | Rajendra Kashinath Singh | GEPL.P-072 | 1165 |
| 43247 | 7590 | 05/03/2007 | EXAMINER | |
| Marina Larson & Associates LLC | | | YOON, TAE H | |
| re: lexan | | | ART UNIT | PAPER NUMBER |
| PO BOX 4928 | | | 1714 | |
| DILLON, CO 80435 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
| 05/03/2007 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

8

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

MAILED

Application Number: 10/604,166
Filing Date: June 28, 2003
Appellant(s): SINGH ET AL.

MAY 03 2007
GROUP 1700

Marina T. Larson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 29, 2007 appealing from the Office action mailed June 7, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

Claims 1-29 are rejected and are the subject of the appeal.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

| | | |
|-----------|------------------|---------|
| 5,353,046 | Rosenquist et al | 3-2002 |
| 6,136,945 | Mestanza | 10-2000 |
| 5,606,007 | Sakashita et al | 2-1977 |
| 4,130,530 | Mark et al | 12-1078 |
| 3,775,367 | Nouverine et al | 11-1973 |

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-29 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the ratio of butyl tosylate and sodium from 1.2 to 24.2 (table 1) and of phosphorous acid and sodium from 6.1 to 12.1 (table 2), does not reasonably provide enablement for the recited language of an acid quencher and a basic catalyst and ratios thereof. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

Claim 1 recites a 1 to 30-fold molar ratio of an acidic quencher and an initial basic catalyst, and V0 UL flammability. However, there is no disclosure with respect to how to choose said molar ratio depending on the acidic quencher and initial basic

catalyst used. Batch 2 (butyl tosylate and Na) of table 1 meets the instantly recited molar ratio, but does not yield the recited V0 UL flammability. Also, batch 3 (phosphorous acid and Na) of table 2 meets the instantly recited molar ratio, but does not yield the recited V0 UL flammability. Thus, undue experimentation would be needed in order to find out whether a particular combination of the acidic quencher and initial basic catalyst in the claimed molar ratio would yield the recited V0 UL flammability or not. With respect to the dependent claims reciting narrower molar ratios for the given acidic quencher, said claims do not recite Na as a basic catalyst used in examples, and thus instant examples failed to support the claims.

One enabling example would be sufficient in most cases, but the instant specification provides conflicting results as discussed above, and thus the instant rejection is maintained.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rosenquist et al (US 6,353,046).

Rosenquist et al teach the flame retardant polycarbonate containing the instant perfluoroalkane sulfonate and cyclic siloxane in abstract, examples and claims 1-4 and 20-26. Example 2 (tables 2A and 2B) shows the instant UL 94 V0 and % haze. A thickness of 75 mil is 1.9 mm. Said example would meet the UL 94 V0 at a thickness of 1.6 mm inherently. With respect to the molar ratio of an acidic quencher and a basic catalyst, the instant claims are directed to a polycarbonate composition, and thus the recited polymerization process for a polycarbonate has little probative value. Furthermore, no particular properties or structural limitations for the polycarbonate obtained by the recited process are recited, and different reaction processes such as when and how the acidic quencher are added during and/or after the polymerization would yield different final polycarbonates. However, the claim is silent as to such processes even though it is a product-by-process claim, and thus a burden is on applicant that the instant polycarbonate differs from that of Rosenquist et al. An invention in a product-by-process is a product, not a process. See In re Brown, 459 F2d 531, 173 USPQ 685 (CCPA 1972) and In re Thorpe, 777 F2d 695, 697, 227 USPQ 964 (Fed. Cir. 1985). **SmithKlein vs. Apotex** (CAFC, 04-1522, 2/24/2006), Once a product is fully disclosed in the art, future claims to that same product are precluded, even if that product is made by a new process. Furthermore, Rosenquist et al teach that the process taught by Sakashita et al (US 5,606,007) is well known in the art at col.

2, lines 11-14. Thus, the polycarbonate of Rosenquist et al would encompass the instant polycarbonate.

Thus, the instant invention lacks novelty.

Claims 1-29 are rejected under 35 U.S.C. 103(a) as obvious over Rosenquist et al (US 6,353,046) in view of Sakashita et al (US 5,606,007) and Mestanza (US 6,136,945).

The instant invention recites a molar ratio of the acidic quencher, and initial basic catalyst over Rosenquist et al even though said molar ratio has little probative value in a product-by-process claim.-

With respect to the acidic quencher, the use of said acidic quencher in producing polycarbonates is a routine practice in the art as taught by Sakashita et al (example 1) and Mestanza (table 1) since it improves % haze and yellowness index.

It would have been obvious to one skilled in the art at the time of invention to utilize the acid quenched polycarbonates of Sakashita et al and Mestanza in Rosenquist et al since Rosenquist et al teach the polycarbonates of Sakashita et al and since the use of said acidic quencher in producing polycarbonates is a routine practice in the art as taught by Sakashita et al (example 1) and Mestanza (table 1) since it improves % haze and yellowness index.

Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mark et al (US 4,130,530) in view of Rosenquist et al (US 6,353,046) and Nouvertne

(US 3,775,367), and further in view of Sakashita et al (US 5,606,007) and Mestanza (US 6,136,945).

Mark et al teach a polycarbonate composition plasticized with the instant cyclic siloxane at col. 1, line 44 to col. 2, line 3 and in examples. The instant invention further recites employing a flame retardant component, a potassium perfluoroalkane sulfonate, and the use of an acidic quencher over Mark et al. However, the use of said potassium perfluoroalkane sulfonate (as a flame retardant) in polycarbonates is well known practice in the art as taught by Rosenquist et al (col. 4, lines 9-10 and examples) and Nouvertne (col. 2, lines 26-45 and examples). Also, the use of said acidic quencher in producing polycarbonates is a routine practice in the art as taught by Sakashita et al (example 1) and Mestanza (table 1) since it improves % haze and yellowness index.

It would have been obvious to one skilled in the art at the time of invention to utilize the art well known flame retardant such as potassium perfluorobutane sulfonate for polycarbonates of Rosenquist et al and Nouvertne and the acid quenched polycarbonates of Sakashita et al and Mestanza in Mark et al since Mark et al teach employing other materials at col. 4, lines 9-13 and since polycarbonates are inherently flammable as taught by Rosenquist et al (col. 1, lines 9-10) and since the use of said acidic quencher in producing polycarbonates is a routine practice in the art as taught by Sakashita et al (example 1) and Mestanza (table 1) since it improves % haze and yellowness index.

(10) Response to Argument

With respect to 112, 1st PP rejection, applicant asserts that Batches 3 and 4 of table 2 would not be the invention, but note that Batch 3 of Table 2 meets the recited molar ratio of an acid quencher and a basic catalyst, but fails to meet UL rating. Batch 7 of Table 1 having similar molar ratio to Batch 3 of Table 2 has UL rating of V0. Batch 2 of Table meets the recited molar ratio of 1.2, but it has yielded UL rating of V2. Thus, undue experimentation would be needed for different acid quenchers and basic catalysts and molar ratios thereof in order to see whether UL rating of V0 would be obtained or not.

Claims 7, 9, 21, 23, 27 and 29 recite that acidic quencher is phosphorous acid at a molar ratio of 1 to 15, but applicant failed to show that the ratio of 1 and 15 would yield UL rating of V0. Applicant points to a paragraph [0030] for said molar ratio of 1 to 15, but said [0030] also states that said molar ratio of 1 to 15 is equivalent to 1 to 30 assuming the phosphorous acid is acting as a monoprotic acid.

Applicant asserts that the examiner failed to address claims 6, 8, 12, 14, 20, 22, 26 and 28 reciting butyl tosylate and 1 to 10 ppm, but it can be self-explained since the paragraph [0028] teaches that said 1 to 10 ppm is equivalent to a molar ratio of about 2 to 25 and since applicant failed to show that said molar ratio of about 2 yields UL rating of V0. Also, notes that said "about 2" encompasses 1.8 or 1.9, for example.

With respect to 34 U.S.C.102(b) and 103(a)rejection under Rosenquist et al, applicant asserts that there are residual components of the acidic quencher and basic

catalyst present in the polycarbonate and thus is that the composition is different. However, claims do not require presence of said residual components contrary to applicant's assertion, and the polycarbonate could have been purified and thus is free of said residual components. Furthermore, Rosenquist et al teach that the process taught by Sakashita et al (US 5,606,007) is well known in the art at col. 2, lines 11-14. Thus, the polycarbonate of Rosenquist et al would encompass the instant polycarbonate.

Applicant further asserts that table 2A (col. 7) shows 1.6% haze and table 2B (col. 3) shows 1.4% haze. But, the examiner does not see said 1.4% haze in table 2B contrary to applicant's assertion, and example 2 (tables 2A and 2B) showing the instant UL 94 V0 and % haze would be sufficient for anticipation.

Applicant also asserts that a thickness of 60 mil (1.5 mm) yielded only marginal performance in example 2, and thus the instant claim 3 reciting 1.6 mm for UL 94 V0 cannot be anticipated. However, the instant 1.6 mm is thicker than 1.5 mm of Rosenquist et al, and the result cannot be predicted without an actual experimentation. Furthermore, the actual meaning of said marginal performance is unclear, and it could be related to drips or melt flow.

With respect to 35 U.S.C. 103(a) over Rosenquist et al (US 6,353,046) in view of Sakashita et al (US 5,606,007) and Mestanza (US 6,136,945), even if the recited process were to have any probative value, Rosenquist et al teach that the method of making a polycarbonate is well known in the art and Sakashita et al (US 5,606,007) at

col. 2, line 14, and thus the use of such polycarbonate of Sakashita et al is a *prima facie* obviousness contrary to applicant's assertion.

Applicant asserts that the instant test shows both minimum and maximum amounts of the acidic quencher that is appropriate, and that, within this range, the compositions offer desirable characteristics, in particular low haze levels, which are not suggested by the cited art. But, the examiner disagrees with such assertion since Rosenquist et al show said low haze levels. Also, the instant amount of the acidic quencher is taught by Sakashita et al (example 1).

With respect to 35 U.S.C. 103(a) as being unpatentable over Mark et al (US 4,130,530) in view of Rosenquist et al (US 6,353,046) and Nouvertne (US 3,775,367), and further in view of Sakashita et al (US 5,606,007) and Mestanza (US 6,136,945).

Applicant failed to show any unexpected result of using the art well known flame retardant such as potassium perfluorobutane sulfonate for polycarbonates in Mark et al. The process limitation has no probative value in the instant product claims, and use of the art well known process for obtaining polycarbonates would be a *prima facie* obviousness. Applicant failed to show any unexpected result as discussed above.

With respect to the evidence discussed by applicant, **the process limitation has no probative value in the instant product claims.**

Applicant asserts that he has demonstrated a conclusion of non-obviousness reasonably and that the examiner failed to provide rebuttal, but the examiner disagrees

with such assertion since the examiner has provided various reasons in the final rejection and advisory action.

Applicant asserts that the showing of two acidic quencher and sodium salt of claim 2 would have a probative value, but the examiner disagrees since batch 2 of table 1 clearly shows that a ratio 1.2 for butyl tosylate and sodium falling within the claimed molar ratio does not yield UL rating of V0, but V2. The similar logic is applied to phosphorous (molar ratio of 18.3) based on batch 3 of table 2. Thus, more showing would be needed and the broadly recited claimed language and narrow and/or confusing showings do not overcome the rejection.

Applicant further asserts that claims 6-9, 12-15 and 20-23 (and new claims 26-29) are directed to a sodium salt and specific acid quenchers, and that the examiner's arguments are inconsistent. But, the examiner disagrees with such assertions since, for example, a combination claims 6, 1 and 2 would yield butyl tosylate added in a 1 to 30 fold molar ratio with a sodium salt, and table 1 does not show any unexpected result thereof as pointed out in previous office action and above (112, 1st and anticipation under Rosenquist et al). Also, for example, a combination claims 21 and claims 16-20, 1 and 2 would yield phosphorous acid added in a 1 to 15 fold molar ratio with a sodium salt, and table 2 does not show any unexpected result thereof as pointed out in previous office action and above (112, 1st and anticipation under Rosenquist et al). The showing (molar ratio of 6.1 to 12.1) is narrower than the recited molar ratio of 1 to 15.

With respect to claims 1, 24 and 25, applicant asserts unexpected results, but these claims do not recite particular acid quencher and basic catalyst used in examples. Thus, the scope of claims is broader than the actual showing. Besides, said unexpected results cannot overcome anticipation rejection.

With respect to claims 2-5, 10, 11 and 16-19, these claims do not recite particular acid quencher in examples. Thus, the scope of claims is broader than the actual showing. Besides, said unexpected results cannot overcome anticipation rejection.

With respect to claims 6, 12 and 20, batch 2 of table 1 meets the instant molar ratio, but fails to meets UL 94 V0 contrary to applicant's assertion. Besides, any unexpected results cannot overcome anticipation rejection.

With respect to claims 7, 13 and 21, table 2 showing molar ratios of 6.1 and 12.1 do not support the claimed ratio of 1 and 15 contrary to applicant's assertion. Besides, any unexpected results cannot overcome anticipation rejection.

With respect to claims 8, 14 and 22, batch 2 of table 1 meets the instant molar ratio, but fails to meets UL 94 V0 contrary to applicant's assertion. Besides, any unexpected results cannot overcome anticipation rejection.

With respect to claims 9, 15 and 23, table 2 showing molar ratios of 6.1 and 12.1 do not support the claimed ratio of 1 and 15 contrary to applicant's assertion. Besides, any unexpected results cannot overcome anticipation rejection.

With respect to claims 26 and 28, batch 2 of table 1 meets the instant molar ratio, but fails to meets UL 94 V0 contrary to applicant's assertion. . Besides, any unexpected results cannot overcome anticipation rejection.

With respect to claims 27 and 29, table 2 showing molar ratios of 6.1 and 12.1 do not support the claimed ratio of 1 and 15 contrary to applicant's assertion. Besides, any unexpected results cannot overcome anticipation rejection.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

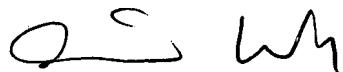
THY/ April 26, 2007

Tae H Yoon



AU 1714, Primary Examiner

Conferees:



David Wu, SPE, AU 1713

Jennifer ~~Kell~~-Michener, Appeal Conference Specialist



JENNIFER MICHENNER
QUALITY ASSURANCE SPECIALIST